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TANK INSPECTION REPORT

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Inspection Report

Notification Number 6080674 ✓ Work Order 6084034 ✓
Notification Desc TANK, 400BBL Maintenance Plan QNATANK12808
Tasklist Operation (5Y Inspection Interval) 5Y Code Inspection Tank 400 to 1000 bbl,

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Equipment Static Data

Equipment Number	66130646	Equipment Description	TANK, 400BBL
Class	TANK	Tag Number	WATER
Serial Number	07-006-C1	Year Built	2007
Manufacturer	G.L.M.INDUSTRIES		
Location	FH-FW-013-00006	Location Description	ANSELL PLANT #2 07-27-051-19W5
Provincial Number		PM Activity	Code
Status Codes	NOPR ORAS	Equipment Status	In Service - Fully Utilized

Design Max Temp		Design Min Temp		Design Standard
Enviro Vault Exists		Fabrication Type		Firetube Exists
Fluid Description	WATER	Fluid Service	SWEET	Insulation Exists
Internal Coating Exists		Number of Walls		Secondary Containment
Skidded Flag	Y	Tank Service Date		Tank Type
Volume	400.00 BBL			

PRD Static Data

Equip ID	Location	Size		Set Pressure	Capacity	Manufacturer	Serial Number	Model Number	Next Service Date
		Inlet	Outlet						

Process Data

Product Description Fluid Service ☒ Sweet ☐ Sour PPM
Operating Pressure KPA Operating Temperature °C

Pressure Test

Test Completed ☐ Yes ☒ No Test Acceptable ☐ Yes ☐ No Test Report #

PSV Data

Tag/Serial No.	Location	Size		Set Pressure	Capacity	Model / Type	Service Date
		Inlet	Outlet				

Inspection History

Inspected By MARCHAK, BOB Inspection Date 2008.05.13

Inspection Summary

An external inspection was carried out to verify the integrity of the tank.
No major concerns were found and the tank is considered acceptable for continued service.

Recommendations

- 1) Seal the roof penetrations.
- 2) Drill drain holes in the three horizontal structural beams to allow water to drain.

Repairs Completed

Equipment Status

Integrity Status ☒ Suitable for Continued Service ☐ Immediate Repairs Required ☐ Replace
☐ Future Repairs Required
Inventory Status ☒ In Service - Fully Utilized ☐ Idle ☐ Surplus ☐ Scrap

QA Activities

- | | | |
|--|--|---|
| <input checked="" type="checkbox"/> Leave As-Is | <input type="checkbox"/> Weld Overlayed | <input type="checkbox"/> Part / Component Replaced |
| <input type="checkbox"/> Equipment Replaced | <input type="checkbox"/> Grind Dressed | <input type="checkbox"/> Patch Installed |
| <input type="checkbox"/> MAWP Derated | <input type="checkbox"/> Coating - Cleaned & Patched | <input type="checkbox"/> Coating - Removed & Replaced |
| <input type="checkbox"/> Defect Removed & Rewelded | <input type="checkbox"/> Part Cleaned | <input type="checkbox"/> Lapped & Dressed |
| <input type="checkbox"/> Epoxy Patched | | |

Noncompliances or Inspection Deficiencies Issued

External Visual Inspection

The nameplate is attached and legible.
The exterior of the tank is insulated with a 2" thick spray foam insulation with black seal coat. There are several tears and areas of incomplete insulation on the roof. These require to be sealed in order to eliminate any moisture ingress and future corrosion issues.
The piping, bolting and external attachments are all in good condition.
The roof ladder is securely attached and the gauges and vents are clear and free of any fouling.
The tank appears to be secure and level and is mounted on an above ground skid, which is grounded. The tank is set in secondary containment.
The thief hatch appears to be in good working order.
The overall condition of this tank is good.

External NDE Examination**Internal Visual Inspection****Internal NDE Examination****Data Integrity**

The following changes are required in SEIM:

Shell Thickness: 0.1875" ✓
Shell Material: SA-36 or eq ✓
Floor Thickness: 0.250" ✓
Roof Thickness: 0.1875" ✓

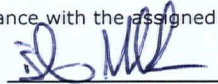
Inspection Interval

Inspection interval is to be set at 5 years.

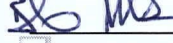
Damages**Inspector Certification**

I, the undersigned certify that the above equipment has been inspected in accordance with the assigned task list and that statements within this report are correct and represent inspection findings.

Inspector Name MARCHAK, BOB Inspector Signature
Inspection Company HUSKY ENERGY Date



01-29-2009

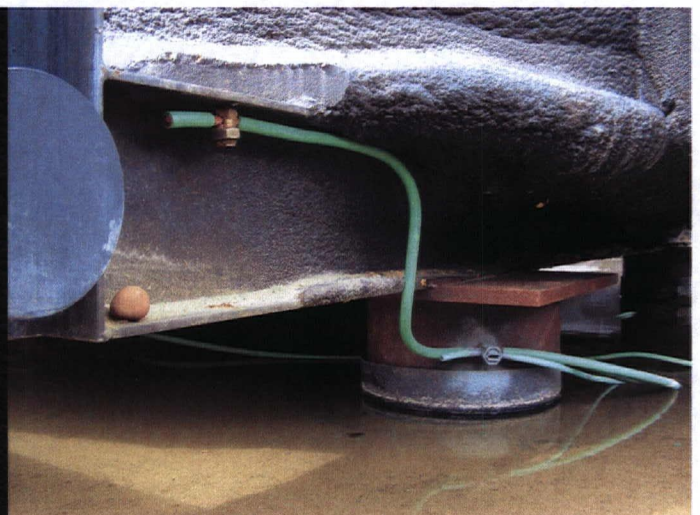
Lead Inspector's Acceptance & Schedule Confirmation

Lead Inspector Bob Marchak Signature  Date 01-29-2009
Vessel Inspection Interval 5 ☐ Leave as-is / Change to: _____
PSV Inspection Interval _____ ☐ Leave as-is / Change to: _____

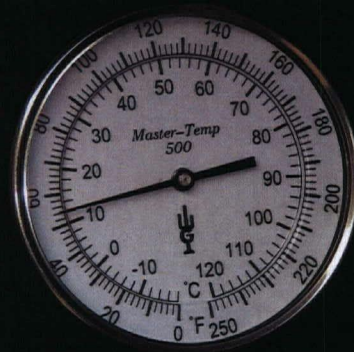
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Produced Water Tank Photos, Serial 07-006-C1

G.L.M. INDUSTRIES L.P.			
	API	12F	ED. <input type="checkbox"/> APP. <input type="checkbox"/> MODIFIED <input checked="" type="checkbox"/>
	SERIAL No.	07-006-C1 YEAR 2007	
	OWNER TAG NO.		
	NISKU, AB	<input type="checkbox"/> CAMROSE, AB.	<input type="checkbox"/>
	BATTLEFORD, SASK.	<input checked="" type="checkbox"/> GRANDE PRAIRIE, AB.	<input type="checkbox"/>
NOM DIA	12.0	FT	SHELL THK 3/16 IN.
NOM HT	20.0	FT	SHELL MATL A-36 OR EQ.
NOM CAP	400	BBL	BTM THK 1/4 IN.
DES. P.	ATM.	OZ	BTM TYPE FLAT
DES. S.G.	1.0		ROOF THK 3/16 IN.
D.M.T.	11	°F	P.W.H.T N/A
D.L.L.	20.0	FT	SERVICE WATER TANK



Produced Water Tank Photos, Serial 07-006-C1



Produced Water Tank Photos, Serial 07-006-C1



TANK DATA SHEET

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PHYSICAL	DESCRIPTION	12'-0" O.D. x 20'-0" HIGH
	NO. REQUIRED	01
	CAPACITY	400 BBL
DESIGN DATA	SERVICE	WATER STORAGE TANK
	ESTIMATED TANK WEIGHTS	EMPTY 12 389 LBS. FULL OF WATER 152 549 LBS.
		<input checked="" type="checkbox"/> THEORETICAL <input type="checkbox"/> AS-BUILT
MATERIALS	DESIGN CODES	API-12F (MODIFIED) GLM GOOD INDUSTRY PRACTICES
	STAMP REQUIREMENTS	N/A
	SPECIFICATIONS	PS-MW-01 & PS-VT-03
	DESIGN INT. PRESS @ TEMP	16.0 oz. @ 200°F
	DESIGN EXT. PRESS @ TEMP	0.4 oz. @ 200°F
	MDMT	11°F PER API-650 SEC. 2
	SPECIFIC GRAVITY	1.0
	ROOF TO SHELL BACKWELDED	NO
	POST WELD HEAT TREAT	NO
	JOINT EFFICIENCY	SHELL= N/A ROOF= N/A CONE= N/A
TESTING	CORROSION ALLOWANCE	SHELL= NIL ROOF= NIL BOTTOM= NIL PIPING= NIL
	ROOF LOADS	N/A
	WIND LOADS	N/A
	SEISMIC LOADS	N/A
	FOUNDATION	UNKNOWN (BY OTHERS)
	SHELL	A-36 OR EQ.
	ROOF	A-36 OR EQ.
	BOTTOM	A-36 OR EQ.
	CONES	N/A
	HEAD(S)	N/A
PAINTING & COATING DATA	SUPPORT STRUCTURE	N/A
	NOZZLE	A-106-B
	MANWAY	A-36 OR EQ.
	FLANGE	A-105/A-182-F304L
	REINFORCING PADS	A-36 OR EQ.
	PIPING	A-312-TP304L
	FITTINGS	A-403-WPW-304L
	COUPLINGS OR FORGINGS	A-182-F304L
	BOLTING-INTERNAL/EXTERNAL	GRADE 2 PL./A-193-BB/A-194-8
	GASKETS (NOZZLE/MW & TH)	304 FLEX/NEOPRENE
PAINTING & COATING DATA	STRUCTURAL	G40.21-44W
	OTHER	N/A
	TANK SHALL RECEIVE AIR/SOAP LEAK TEST TO 24.0 oz.	
	TANK FLOOR SHALL RECEIVE VACUUM BOX LEAK TEST TO 3.0 PSIG	
	TANK SHELL TO FLOOR JOINT SHALL RECEIVE LIQUID PENETRATE EXAM	
	SEE Q.A. NOTES #s 1	
	DESCRIPTION	SMR # (INT. USE ONLY)
	EXTERNAL PREPARATION AND COATING	
	1. EXTERIOR OF SHELL, ROOF, SKID, STRUCTURAL, FITTINGS, UNDERSIDE OF BOTTOM TO RECEIVE:	
	a) BRUSH BLAST (SSPC-SP7) USING SIL 7	
b) ONE (01) COAT SHOP PRIMER		
COLOUR: BLACK		
2. INTERIOR OF ENVIROVAULT TO RECEIVE:		
-NIL		
INTERNAL PREPARATION AND COATING		
1. SHELL, FITTINGS, ROOF & BOTTOM RECEIVE:		
a) WHITE METAL BLAST (SSPC-SP5) USING SIL 7		
b) 16 TO 20 mils DFT OF DEVOC COATINGS, DEVMAT 100 EPOXY		
INSULATION		
1. EXTERIOR OF SHELL & ROOF TO RECEIVE:		
a) 2" THK. URETHANE SPRAY-ON FOAM c/w		
ONE (01) COAT OF BLACK ELASTOMERIC SEALER		

GENERAL NOTES

1. TANK DESIGNED IN BATTLEFORD, SK
2. THESE DRAWINGS HAVE BEEN REVIEWED FOR COMPLIANCE WITH GOOD INDUSTRY PRACTICES REFERENCING API-12F (MODIFIED) AND THE APPLICABLE CONTRACT. PROCESS CONSIDERATIONS REMAIN THE RESPONSIBILITY OF THE USER OR THE USER'S DESIGNATED AGENT.
3. LADDER IS IN ACCORDANCE WITH AB OH&S SPECIFICATIONS (IMPLEMENTED APRIL 30, 2004).

DESIGN NOTES

1. THIS TANK HAS NOT BEEN DESIGNED FOR SIMULTANEOUS INTERNAL DESIGN PRESSURE AND WIND OVERTURNING.
2. VENTING IN ACCORDANCE WITH API-12F HAS NOT BEEN REQUESTED AND IS NOT PROVIDED.
3. LIFTING LUGS ARE FOR LIFTING EMPTY TANKS ONLY.

MATERIAL NOTES

1. MATERIAL HEAT NUMBERS FOR SHELL, ROOF, & BOTTOM TO BE RECORDED BUT NOT ASSIGNED PER ITEM. MTR's ARE KEPT FOR RECORD FOR GLM PURCHASING.
2. THIEF HATCH NECK IS FABRICATED AND CONSEQUENTLY IS NOT RATED AT CLASS 150.

FABRICATION NOTES

1. ALL SHELL NOZZLES TO STRADDLE VERTICAL CENTERLINES.
2. ALL ROOF NOZZLES TO STRADDLE TANK RADIAL CENTERLINES UNLESS OTHERWISE SHOWN ON GENERAL ARRANGEMENT.
3. SHOP TO LOCATE LIFT LUGS.

PAINTING & COATING NOTES

1. SHOP TRIAL FIT ALL APURTENANCES PRIOR TO PAINTING OR COATING.
2. ALL INTERNAL INSPECTIONS TO OBTAIN THICKNESS READINGS & RECORD SAME, ARE AS PER SSPC-PA2
3. INTERNAL COATING HOLIDAY DETECTION TO BE CONDUCTED IN ACCORDANCE WITH NACE RPO 188-90.
4. FLANGES FACE MAY RECEIVE INTERNAL COATING BUT ARE EXCLUDED FROM SPECIFIC BLAST AND MILS DFT REQUIREMENTS.


Q.A. NOTES

1. FABRICATION TOLERANCES AS PER API-12F.

SHIPPING NOTES

1. OPEN CONNECTIONS SHALL BE BLANKED WITH TEMPORARY SHIPPING COVERS.

SHT. NO.	DESCRIPTION	REV. NO.	REVISION DATE	CONSTRUCTION RELEASE DATE
1	TANK DATA	0	-	04/03/08
2A	GENERAL ARRANGEMENT (ORIENTATION)	0	-	04/03/08
2B	GENERAL ARRANGEMENT (ELEVATION)	0	-	04/03/08
3	MISC. NOZZLE & COUPLING DETAIL	0	-	04/03/08
4	ENVIROVAULT DETAIL	0	-	04/03/08
5	LADDER DETAIL	0	-	04/03/08
6	HOT BOX DETAIL	0	-	04/03/08
50	SHELL, ROOF, & BOTTOM DETAIL	0	-	04/03/08




G.L.M. INDUSTRIES L.P.
API ☐ 12F ED. ☐ 11 APP. ☐ MODIFIED ☒
SERIAL No. ** YEAR ***
OWNER TAG NO.
NISKU, AB. ☐ CAMROSE, AB. ☐
BATTLEFORD, SASK. ☐ GRANDE PRAIRIE, AB. ☐

NOM DIA 12.0 FT SHELL THK 3/16 IN.
NOM HT 20.0 FT SHELL MATL A-36 OR EQ.
NOM CAP 400 BBL BTM THK 1/4 IN.
DES. P. 16.0 oz. BTM TYPE FLAT
DES. S.G. 1.0 ROOF THK 3/16 IN.
D.M.T. 11° F P.W.H.T NO
D.L.L. 20.0 FT SERVICE *
 *WATER STORAGE TANK

NAMEPLATE STAMPING DETAIL
(STAMPING TO BE 1/4" MIN.)

SEE WORK ORDER ** ***
CURRENT YEAR

REV'D FOR CONSTRUCTION	BY	APP'D	 G.L.M. INDUSTRIES L.P. NISKU, AB CALGARY, AB BATTLEFORD, SK CAMROSE, AB GRANDE PRAIRIE, AB	
	DATE	DATE		
	DATE	DATE		
	DATE	DATE		
DATE	DRAWN BY D. BRANN & DATE: OCT. 15, 2007		CHECKED BY D.D. & DATE: APR 03/08	APPROVED FOR CONSTRUCTION BY & DATE:
	TOLERANCES: API-12F (MODIFIED)		DESCRIPTION: TANK DATA	
	GLM GOOD INDUSTRY PRACTICES		HUSKY ENERGY	
	SCALE: N.T.S.		12'-0" O.D. x 20'-0" HIGH	
NO.	JOB CLASSIFICATION #		WATER STORAGE TANK	
	PURCHASE ORDER # TO FOLLOW		CAPACITY: 400 BBL	
DRAWING NUMBER: HUSKY 400 SW STD - 1		REV. 0		

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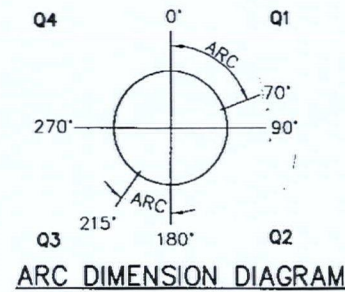
BOTTOM/ROOF BUTT WELD	SHELL CIRC. OR VERT. SEAM WELD	SHELL TO FLOOR WELD	ROOF TO SHELL WELD	SLIP-ON FLG. TO NECK WELD
C.S. WPS# 1-1-002A, 2-1-129A	C.S. WPS# 1-1-002A, 2-1-129A	C.S. WPS# 1-1-002A, 2-1-129A	C.S. WPS# 1-1-049A	C.S. WPS# 1-1-002A, 2-1-129A
ROOF NOZZLE/COUPLING WELD	SHELL NOZZLE/COUPLING WELD	MISC. STRUCTURAL WELD	PLATE FLG. TO NECK WELD	WELD NECK FLG. TO PIPE/PIPE TO PIPE WELD
C.S. WPS# 1-1-073A S.S. WPS# 41-8/1-163A	C.S. WPS# 1-1-073A S.S. WPS# 41-8/1-163A	C.S. WPS# 1-1-047	C.S. WPS# 1-1-002A	C.S. WPS# 32-1-068A

NOZZLE LOCATION NOTES:

- ELEVATIONS ARE GIVEN REFERENCING DATUM AS SHOWN IN ELEVATION.
- ALL ARC LENGTHS ARE MEASURED CLOCKWISE REFERENCING NEAREST MAJOR CENTERLINE ON THE OUTSIDE OF BOTTOM SHELL COURSE.
- OUTSIDE DIAMETER = 12'-0"
- CIRCUMFERENCE = 37'-8 3/8"
- 90° ARC LENGTH = 9'-5 3/32"
- T.O.B. = TOP OF BOTTOM

GENERAL WELDING NOTES:

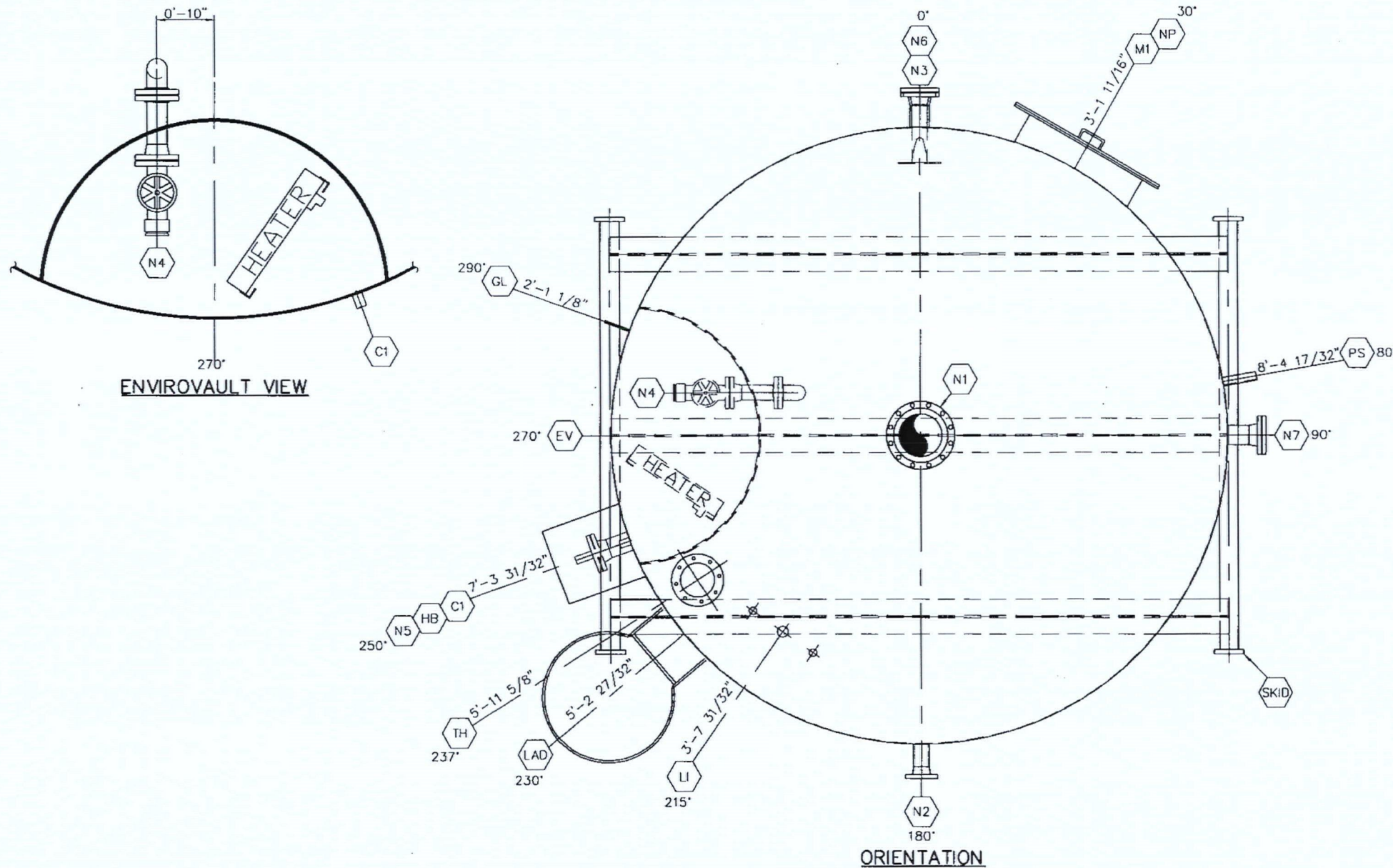
- BEVELS TO BE +/- 10°
- LANDS AND GAPS TO BE +/- 1/16"
- SEE DETAIL DRAWING FOR SPECIFIC WELD SIZE AND JOINT PREP.




ARC DIMENSION DIAGRAM

NOZZLE SCHEDULE

MK#	QTY.	SIZE	CLASS	TYPE	O.S.P.	I.S.P.	SERVICE/DESCRIPTION	ELEVATION (SEE NOZZLE LOCATION NOTE 1)	ASSY.
N1	1	10"	150	RFWN	0'-8"	FLUSH	VENT	ROOF	3-D
N2	1	3"	150	RFWN	0'-8"	1/4"	FILL CONNECTION	19'-0"	3-A
N3	1	3"	150	RFWN	0'-8"	0'-8"	BLOWDOWN c/w INT. 304' S.S. DEFLECTOR PLATE	19'-0"	3-B
N4	1	3"	150	RFWN	0'-5"	0'-6"	DRAIN c/w REM. INT. S.S. SIPHON DRAIN w/ COMPANION FLG. CLIP GATE VALVE (1-1590) & ALUMINUM CAMLOCK ASSY	1'-9"	3-C
N5	1	4"	150	RFWN	0'-8"	1/4"	LSHH c/w RFBF TAPPED TO 2" w/ WELLMARK HLSD SWITCH	19'-0"	3-A
N6	1	4"	150	RFWN	0'-8"	1/4"	SPARE c/w RFBF, GSK'T, & BOLTING	6'-0"	3-F
N7	1	4"	150	RFWN	0'-8"	1/4"	SPARE c/w RFBF, GSK'T, & BOLTING	0'-5 1/4"	3-F
C1	1	1"	3000	NPT	FULL	1/4"	FUEL GAS CONNECTION	0'-9"	3-E
LI	1	1 1/2"	3000	FNPT	FULL	1/4"	GLM STD CLOSE TYPE LEVEL INDICATOR c/w PVC FLOAT & CUBIC METER GAUGE BOARD	ROOF	CTLG-1
TH	1	8"	FAB'D	FAB'D	STD	1/4"	GLM STD THIEF HATCH NECK	ROOF	THIEF
M1	1	Ø30"	FAB'D	FAB'D	STD	1/4"	GLM STD MANWAY c/w COVER, GSK'T, & BOLTING (30SMW-1-1R111)	1'-8"	30SMW
NP	1	N/A	N/A	N/A	N/A	N/A	G.L.M. STD NAMEPLATE c/w BRACKET	4'-6"	NP-B
EV	1	40"	N/A	N/A	N/A	N/A	ENVIROVAULT c/w 2 Pc. DOOR, 24" x 24" 24,000 BTU CATALYTIC HEATER, REGULATOR, 25' BATTERY LEAD, WALL MOUNT & THERMOSTAT w/ 12VDC STARTUP & NATURAL GAS SERVICE	STD	4-A 4-B
LAD	1	N/A	N/A	N/A	N/A	N/A	ALBERTA OH&S LADDER c/w TOP HOOP	STD	5-A
INS	2	N/A	N/A	N/A	N/A	N/A	G.L.M. STD. INSULATION STANDOFFS	STD	STANDOFF
LL	2	N/A	N/A	N/A	N/A	N/A	G.L.M. STD LIFTING LUGS (25KLL-1)	STD	LLUG
HB	1	1'-6"	N/A	N/A	N/A	N/A	WD. x 1'-6" HG. x 1'-8" DEEP HINGED HOT BOX	19'-0" ♂	6-A
GL	1	N/A	N/A	N/A	N/A	N/A	G.L.M. STD GROUNDING LUG	1'-0" (TOP)	GLUG
PS	2	1/4"	N/A	N/A	N/A	N/A	x 2" x 2" ANGLE x 0'-8" LG PIPE SUPPORT	17'-0" 3'-0"	X
SKID	1	N/A	N/A	N/A	N/A	N/A	400 BBL BASE SKID	STD	400BS



DD	BY	APPD	 G.L.M. INDUSTRIES L.P. Misku, AB Calgary, AB Battleford, SK Camrose, AB Grande Prairie, AB	
REV'D FOR CONSTRUCTION	REVISION	DRAWN BY D. BRANN & DATE: OCT. 15, 2007		
		CHECKED BY D.D. & DATE: APR 03/08		APPROVED FOR CONSTRUCTION BY & DATE:
	DATE	TOLERANCES: API-12F (MODIFIED)		
	02/14/08	DESCRIPTION: GENERAL ARRANGEMENT (ELEVATION) HUSKY ENERGY 12'-0" O.D. x 20'-0" HIGH WATER STORAGE TANK CAPACITY: 400 BBL		
0	NO.	GLM GOOD INDUSTRY PRACTICES. SCALE: N.T.S. JOB CLASSIFICATION #		PURCHASE ORDER # TO FOLLOW
		DRAWING NUMBER: HUSKY 400 SW STD - 2B		REV. 0